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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

KING, JUSTIN

ART UNIT PAPER NUMBER

2111

DATE MAILED: 03/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/819,996

Applicant(s)

BENNETT ET AL.

Examiner

Justin I. King

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 December 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1-5, 7-10, 15-16, 18-19, and 21-22 are rejected under 35 U.S.C. 102(a) as being anticipated by Spencer (U.S. Patent No. 6,295,582).

Referring to claim 1: Spencer discloses fetching data from a memory component, obtaining parameters (column 2, line 61, the predetermine amount) relating to data fetching from said memory component based on an operating frequency (column 1, lines 54-55, column 10, lines 30-38) of a bus; and fetching said data from said memory component based on said obtained parameters. Hence, claim is anticipated by Spencer.

Referring to claim 2: Spencer discloses the data transfer size (column 3, lines 13-14).

Referring to claim 3: Spencer's predetermined value is a threshold value (column 2, lines 55-62).

Referring to claim 4: Spencer discloses said parameters are obtained from values stored in a register (figure 2, figure 5, structure 208) corresponding to said frequency of said bus.

Referring to claim 5: Spencer discloses fetching an initial amount of data from said memory component; storing said initial amount of data in a storage device; and fetching

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additional data from said memory component at least based on a threshold value of said storage device (Spencer's claim 1, column 1, lines 60-65).

Referring to claim 7: Spencer discloses a mechanism to fetch data from a memory component, said mechanism comprising a control unit (figure 3, column 10, lines 30-38) to receive an indication regarding a frequency of a bus; and a storage device including a plurality of registers (figure 5, structure 208), each register to store parameters relating to data fetching based on a different frequency of said bus, said control unit to obtain said parameters based on said indication (column 1, lines 54-55, column 2, line 61, the predetermine amount, column 10, lines 30-38), said control device to further fetch said data from said memory component based on said parameters. Hence, claim is anticipated by Spencer.

Referring to claim 8: Spencer discloses the data transfer size (column 3, lines 13-14).

Referring to claim 9: Spencer's predetermined value is a threshold value.

Referring to claim 10: Spencer discloses said control unit operates based on said parameters to: fetch an initial amount of data from said memory component; store said initial amount of data in said storage device; and fetch an additional amount of data from said memory component at least based on a threshold value of said storage device (Spencer's claim 1, column 1, lines 60-65).

Referring to claim 15: Spencer discloses a computer system comprising a memory subsystem (figure 2, structure 104); a host chipset (figure 2, structure 102) to couple to said memory subsystem via a first bus (figure 2, structure 108); and a bus device (column 2, line 56) to couple to said host chipset via a second bus (figure 2, structure 110), wherein said host chipset fetches data from said memory subsystem for said bus device upon request (column 2, lines 53-

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65), said host chipset comprising a buffer device (figure 3, structure 120) to store data fetched from said memory subsystem via said first bus for said bus device; a plurality of registers (figure 5, structure 208) each to contain parameters corresponding to a different operating frequency of said second bus; and a data fetching mechanism to receive an indication of an operating frequency of said second bus and to obtain said parameters corresponding to said operating frequency of said second bus based on said indication (figure 3, column 10, lines 30-38), said control device to fetch said data from said memory component based on said obtained parameters. Hence, claim is anticipated by Spencer.

Referring to claim 16: Spencer discloses a PCI hub (figure 2, structure 102), and the PCI is known to be either 32 or 64 bits.

Referring to claim 18: Spencer's claim 1's step (e) discloses a predetermined amount of space, which is the size of the initial request from memory when a peripheral request is accepted; thus, it is the initial request length. Spencer's claim 1's step (f) discloses flushing a portion of the data in response to ensure the predetermined amount of space, which is the amount of data in the buffer that must be crossed before fetching data; thus it is the initial threshold length.

Spencer further discloses the subsequent request length and a subsequent threshold length in the claim 1's step (g).

Referring to claim 19: Spencer discloses fetching an initial amount of data from said memory subsystem; storing said initial amount of data in a buffer device; and fetching additional data from said memory subsystem at least based on a threshold value of said buffer device (Spencer's claim 1, column 1, lines 60-65).

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Referring to claim 21: Spencer discloses fetching data from a memory component, obtaining parameters (column 2, line 61, the predetermine amount) relating to data fetching from said memory component based on an operating frequency (column 1, lines 54-55, column 10, lines 30-38) of a bus; and fetching said data from said memory component based on said obtained parameters. Hence, claim is anticipated by Spencer.

Referring to claim 22: Spencer discloses fetching an initial amount of data from said memory component; storing said initial amount of data in a storage device; and fetching additional data from said memory component at least based on a threshold value of said storage device (Spencer's claim 1, column 1, lines 60-65).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459

(1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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5. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Spencer in view of the disclosed prior art.

Referring to claim 17: Spencer's disclosure is stated above; Spencer discloses a PCI hub (figure 2, structure 102), but Spencer does not explicitly describe the hub as a PCI-to-PCI hub. As the Application states, the PCI-to-PCI bridge is a well-known device, and it is documented in the "PCI-PCI Bridge Architecture Specification". Hence, it would have been obvious to one having ordinary skill in the computer art at the time Applicant made the invention to combine the Spencer's teaching in bridge's cache management to the convention PCI-to-PCI bridge because Spencer teaches one to enhancing data transmission between separate frequency domains.

6. Claims 6, 11-14, 20, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of the Spencer and Brown et al. (U.S. Patent No. 4,476,524).

Referring to claims 6, 11, 20, and 23: Spencer's disclosure is stated above, but Spencer does not explicitly disclose a timer. Brown discloses a page storage control system with a timer to minimize the impact from the system control overhead (column 14, lines 62-68, column 15, lines 1-11). Although Brown's invention focuses on the page swap between the main storage and the page rather than between the I/O device and main storage, Brown teaches that it is known to employ a timer in data transferring to minimize the impact from the system control overhead. Hence, it would have been obvious to one having ordinary skill in the computer art at the time Applicant made the invention to adopt Brown's teaching to Spencer because Brown teaches one to minimize the data transferring overhead impact via a timer.

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Referring to claim 12: Spencer discloses control unit fetches a size of data from a memory subsystem on one side of a host chipset for a bus device on an opposite side of said host chipset as a function of said frequency of said bus (figure 2, column 1, lines 56-59).

Referring to claim 13: Spencer discloses data fetching from said memory subsystem (figure 2, structure 104) on one side of said host chipset (figure 2, structure 102), via a primary bus (figure 2, structure 108), for the bus device on an opposite side of said host chipset, via a secondary bus (figure 2, structure 110).

Referring to claim 14: Spencer's disclosure is stated above; Spencer discloses a PCI hub (figure 2, structure 102), but Spencer's hub is not a PCI-to-PCI hub. As the Application states, the PCI-to-PCI bridge is a well-known device, and it is documented in the "PCI-PCI Bridge Architecture Specification". Hence, it would have been obvious to one having ordinary skill in the computer art at the time Applicant made the invention to combine the Spencer's teaching in bridge's cache management to the convention PCI-to-PCI bridge because Spencer teaches one to enhancing data transmission between separate frequency domains.

Response to Arguments

7. In response to Applicant's argument that Spencer is silent as to what criteria are used to determine an appropriate value for the predetermined amount beyond providing a range for the predetermined amount in one embodiment as claimed in claim 1 (Remark, page 8, last paragraph): The claim 1 merely claims "obtaining parameters relating to data fetching from said memory component based on an operating frequency of a bus"; the claim 1 does not explicitly recite any criteria other than the bus frequency. Spencer does disclose that the bus frequency is

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one of the known parameters in transmitting data (column 1, lines 55-59). Applicant further uses the predetermined amount for the sake of the claim 1's argument, but since the claim 1 does not claim the predetermined amount, the claim 1's scope is not limited to the predetermined amount; thus, claim 1 is anticipated by Spencer.

8. In response to Applicant's argument that Spencer does not disclose obtaining parameters related to a data transfer size based upon an operating frequency of a bus as claimed in claim 2 (Remark, page 9, 2nd paragraph's lines 1-2): Spencer does disclose the data transfer size based upon an operating frequency of a bus. As stated, Spencer discloses that the bus frequency is one of the known parameters in each data transaction (column 1, lines 55-59); furthermore, Spencer discloses obtaining the data size in each data transaction (column 3, lines 13-14). Hence, Spencer does disclose the data transfer size based upon an operating frequency of a bus.

9. In response to Applicant's argument that Spencer does not disclose a threshold value based upon an operating frequency of a bus as claimed in claim 3 (Remark, page 9, 2nd paragraph, lines 3-4): Spencer does disclose a threshold value based upon an operating frequency of a bus. As stated above, Spencer discloses that the bus frequency is one of the known parameters in each data transaction (column 1, lines 55-59); furthermore, Spencer discloses a threshold value in each data transaction (column 2, lines 60-62). Spencer's cache threshold value is to accommodate the different frequency (column 1, lines 55-59). Hence, Spencer does disclose a threshold value based upon an operating frequency of a bus.

10. In response to Applicant's argument that Spencer does not disclose obtaining parameters from values stored in a register that correspond to the frequency of the bus as claimed in claim 4 (Remark, page 9, 2nd paragraph, lines 5-6): Spencer does disclose register for storing the data

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transmitting information (figure 5, structure 208). As stated above, Spencer discloses that the bus frequency is one of the known parameters in each data transaction (column 1, lines 55-59); hence, Spencer does disclose a register storing value based upon an operating frequency of a bus.

11. In response to Applicant's argument regarding to claim 5 that Spencer appears to disclose flushing data, and Spencer does not disclose fetching data based upon the predetermined amount of space, and Spencer does not disclose fetching data from a memory component at least based on a threshold value as required by the invention in claim 5 (Remark, page 9, 3rd paragraph): The claim 5 claims fetching additional data from the memory component at least based on a threshold value of the storage device. Spencer discloses that the steps of reading data from the system memory into the cache memory including determining at least a predetermined amount of space within the cache memory (column 2, lines 55-62), the reading memory is the claimed data fetching, and the determining at least a predetermined amount of space within the cache memory is the claimed threshold value of the storage device.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

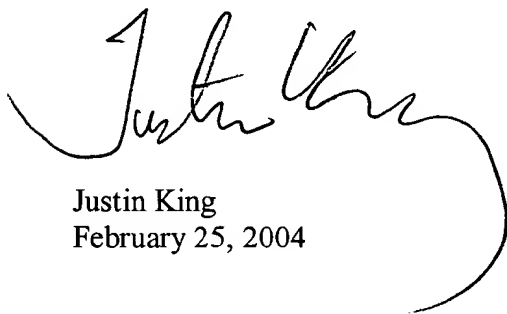
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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin King whose telephone number is (703) 305-4571. The examiner can normally be reached on Monday through Friday from 9:00 A.M. to 5:00 P.M..

If attempts to reach the examiner by telephones are unsuccessfully, the examiner's supervisor, Mark Reinhart can be reached at (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose number is (703)-306-5631.



Justin King
February 25, 2004



XUAN M. THAI
PRIMARY EXAMINER
TC2100